

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 October 2003 (30.10.2003)

PCT

(10) International Publication Number  
**WO 2003/089625 A3**

(51) International Patent Classification<sup>7</sup>: C12N 1/20

A/S, Postboks 829, DK-5230 Odense (DK). JOHAN-  
NESSEN, Arild [NO/NO]; Norferm DA, Postboks 8005,  
N-4068 Stavanger (NO).

(21) International Application Number:  
PCT/GB2003/001689

(74) Agent: FRANK B. DEHN & CO.; 179 Queen Victoria  
Street, London EC4V 4EL (GB).

(22) International Filing Date: 17 April 2003 (17.04.2003)

(25) Filing Language: English

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD,  
SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US,  
UZ, VC, VN, YU, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:  
0209007.4 19 April 2002 (19.04.2002) GB

(63) Related by continuation (CON) or continuation-in-part  
(CIP) to earlier application:  
US 60/384,815 (CIP)  
Filed on 31 May 2002 (31.05.2002)

(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,  
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,  
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): NOR-  
FERM DA [NO/NO]; Postboks 8005, N-4068 Stavanger  
(NO).

**Published:**

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

(71) Applicant (*for GB only*): GOLDING, Louise [GB/GB];  
Frank B. Dehn & Co., 179 Queen Victoria Street, London  
EC4V 4EL (GB).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): MOEN, Einar  
[NO/NO]; Norferm DA, Postboks 8005, N-4068 Stavanger  
(NO). JØRGENSEN, Jeanette, Møller [DK/DK]; Nor-  
ferm Danmark A/S, Postboks 829, DK-5230 Odense (DK).  
JENSEN, Karen, Møller [DK/DK]; Norferm Danmark

(88) Date of publication of the international search report:  
8 January 2004

*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

(54) Title: PRODUCT

(57) Abstract: The invention relates to a microorganism growth substrate which comprises a sterile nutrient composition derived from the biomass of a culture of bacteria including methanotrophic bacteria and further containing at least one sterile nutrient. A preferred biomass material is that derived from a microbial culture comprising *Methylococcus capsulatus* (Bath) (strain NCIMB 11132), *Ralstonia* sp. DB3 (strain NCIMB 13287) and *Brevibacillus agri* DB5 (strain NCIMB 13289), optionally in combination with *Aneurinibacillus* sp. DB4 (strain NCIMB 13288).

WO 2003/089625 A3

## INTERNATIONAL SEARCH REPORT

Application No

PCT/GB 03/01689

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C12N1/20

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, MEDLINE, EMBASE, PAJ, CHEM ABS Data, SCISEARCH, BIOTECHNOLOGY ABS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DD 290 917 A (AKAD WISSENSCHAFTEN DDR) 13 June 1991 (1991-06-13) page 1; claim 1 page 2, line 12 ---	1-8, 10-14
A	WO 01 60974 A (LARSEN JAN ;GOLDING LOUISE (GB); JOHANNESSEN ARILD (NO); KLEPPE GU) 23 August 2001 (2001-08-23) cited in the application the whole document --- -/--	1-14

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex \*

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&amp;\* document member of the same patent family

Date of the actual completion of the international search

13 October 2003

Date of mailing of the international search report

03/11/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Grötzinger, T

# INTERNATIONAL SEARCH REPORT

Application No

PCT/GB 03/01689

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>BOTHE HARALD ET AL: "Heterotrophic bacteria growing in association with <i>Methylococcus capsulatus</i> (Bath) in a single cell protein production process" APPLIED MICROBIOLOGY AND BIOTECHNOLOGY, vol. 59, no. 1, June 2002 (2002-06), pages 33-39, XP002257531  ISSN: 0175-7598  published online on 4 April 2002  the whole document.</p> <p style="text-align: center;">-----</p>	1-14

# INTERNATIONAL SEARCH REPORT

Application No

GB 03/01689

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DD 290917	A	13-06-1991	DD 290917 A5	13-06-1991
WO 0160974	A	23-08-2001	AU 3212201 A	27-08-2001
			BR 0108412 A	11-03-2003
			CA 2400605 A1	23-08-2001
			CN 1426460 T	25-06-2003
			EP 1265982 A2	18-12-2002
			WO 0160974 A2	23-08-2001
			JP 2003523196 T	05-08-2003
			US 2003138878 A1	24-07-2003